

Leaflet | © OpenStreetMap contributors

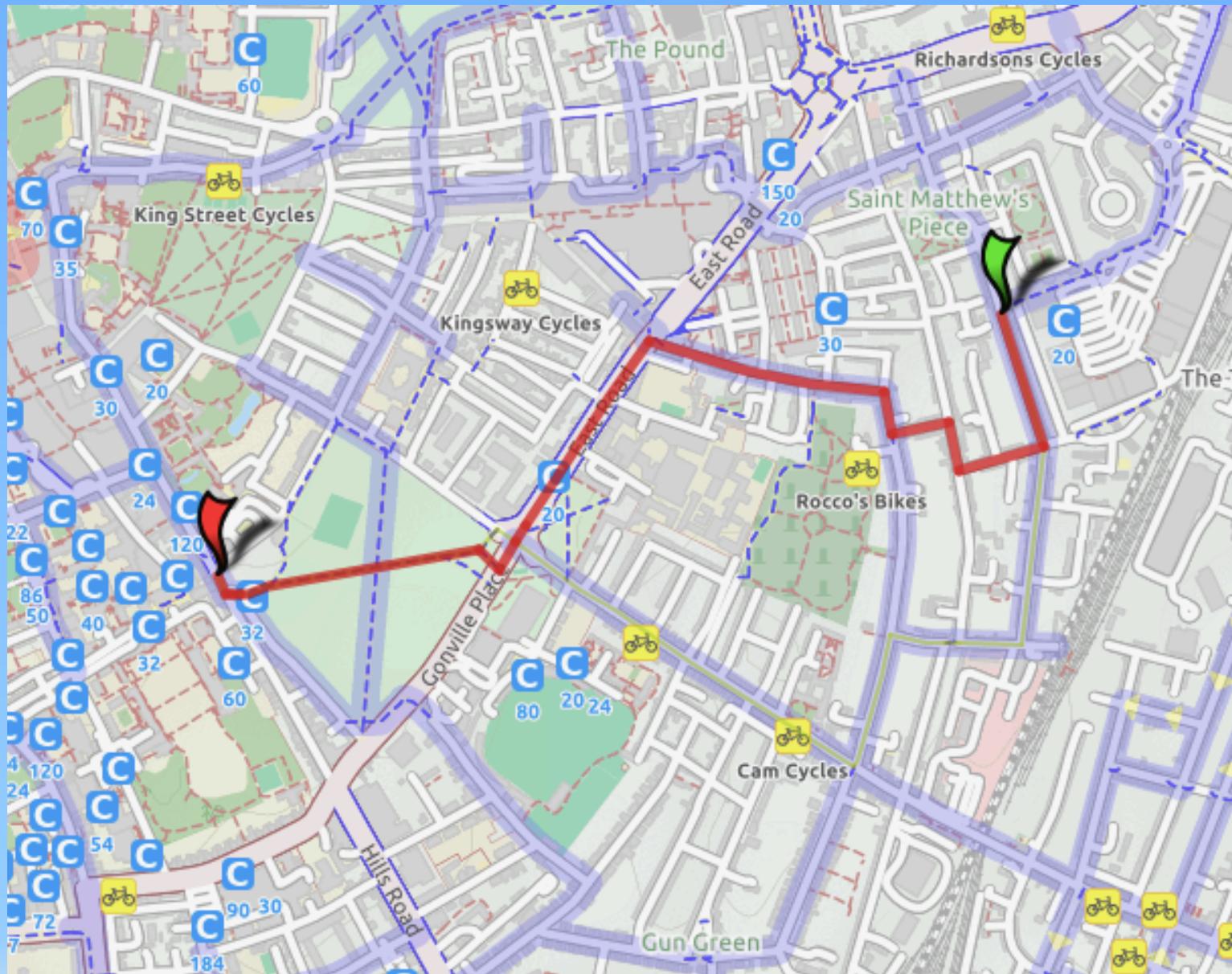
Web mapping with open data

Martin Lucas-Smith, CycleStreets

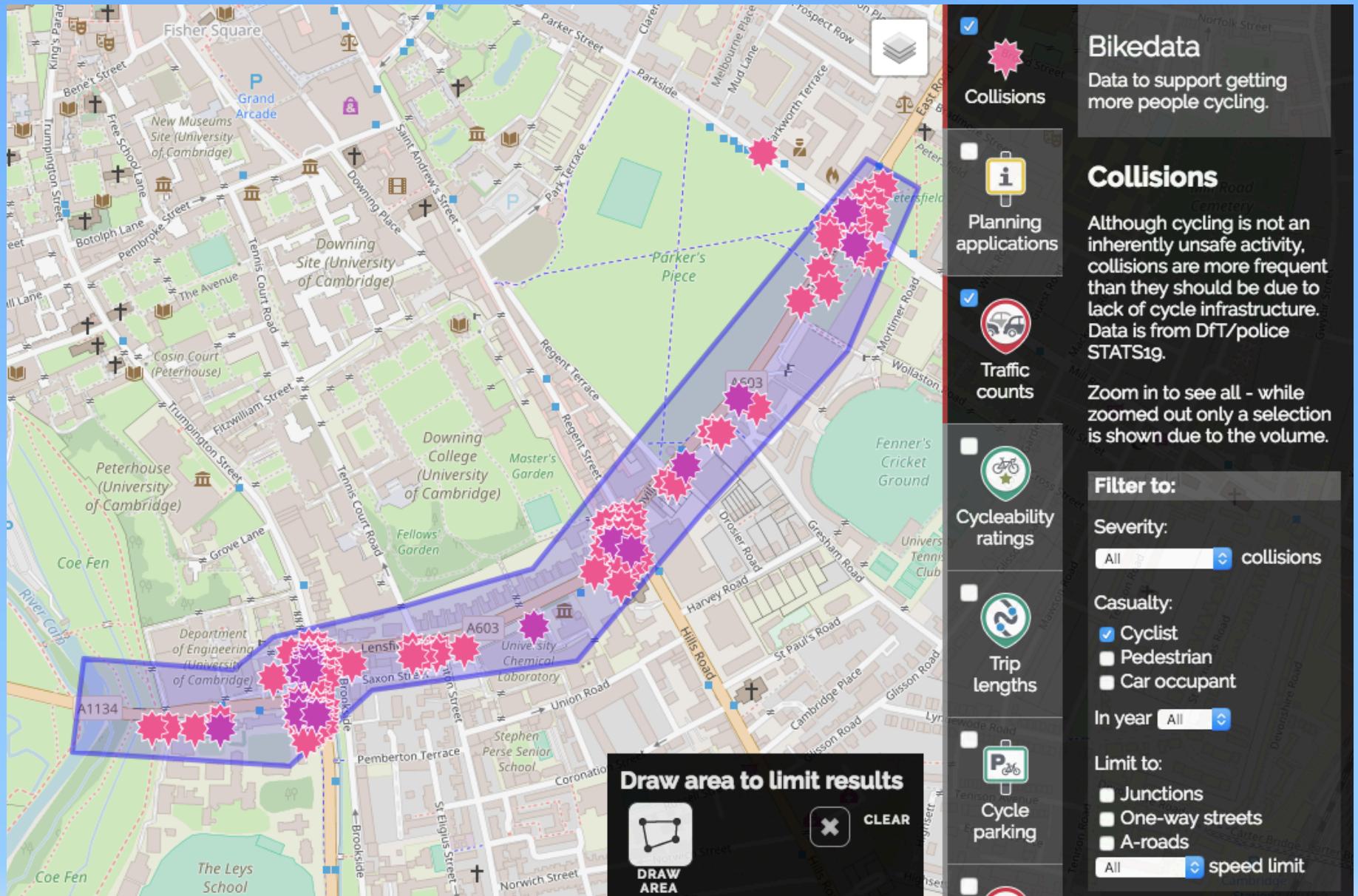


Mapping frameworks

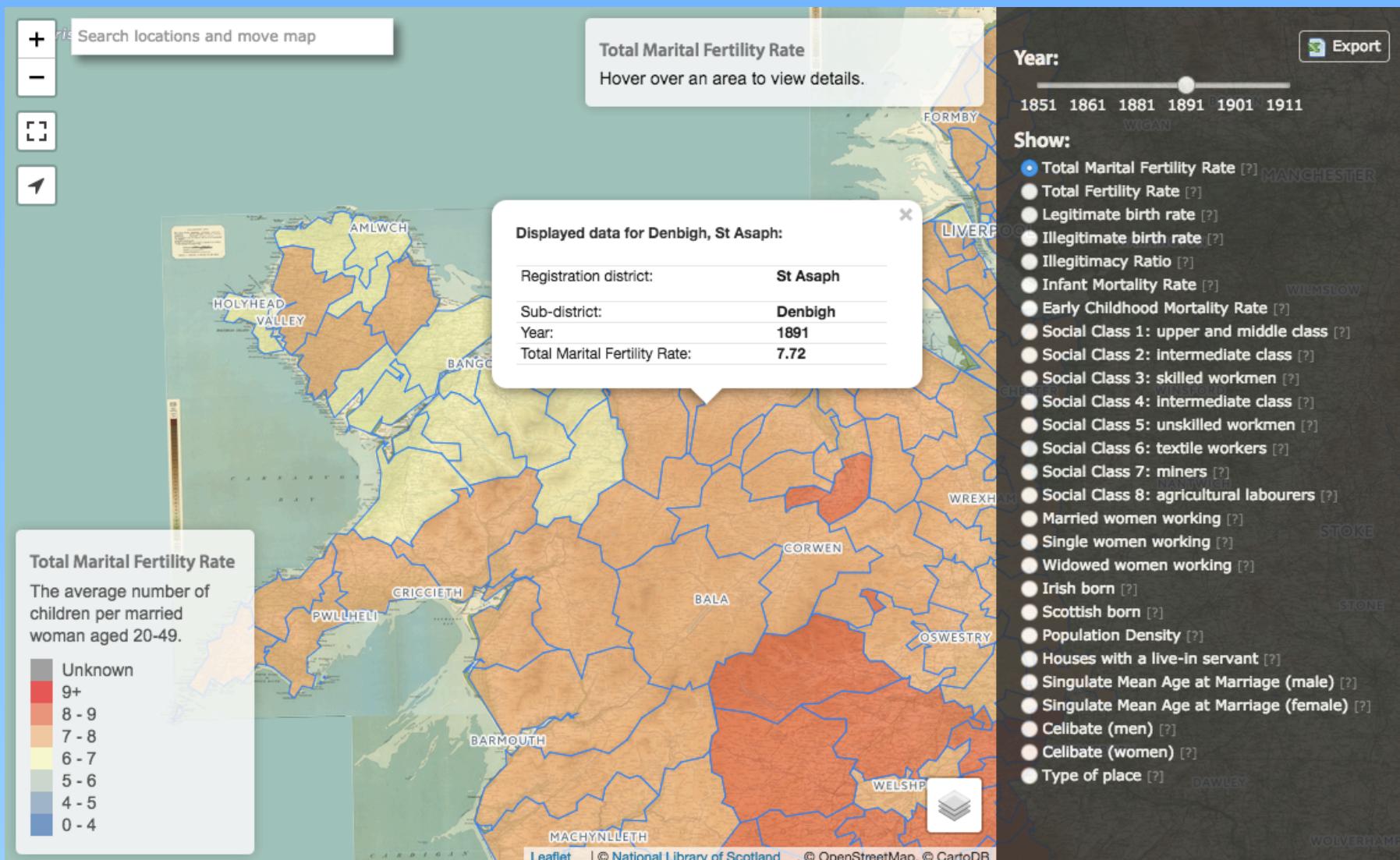
- API which adds a map to your site
- Clickable markers, lines, polygons
- Interactive, e.g. draw on
- Controls (geocoder, zoom, geolocate)



CycleStreets journey planner



CycleStreets Bikedata



Mapping frameworks

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Leaflet.js map framework



Mapping frameworks

Google Maps

- Tied in to Google's services
- Built-in proprietary services
- Closed-source
- Less flexibility

OpenLayers 3

- Open source
- More complex, but better than OL2
- Vector and rotation support

Leaflet.js

- Open source
- Complete flexibility and lots of plugins
- Vector support almost there now
- API is well-designed
- Huge plugin support
- Lightweight

Mapbox.js

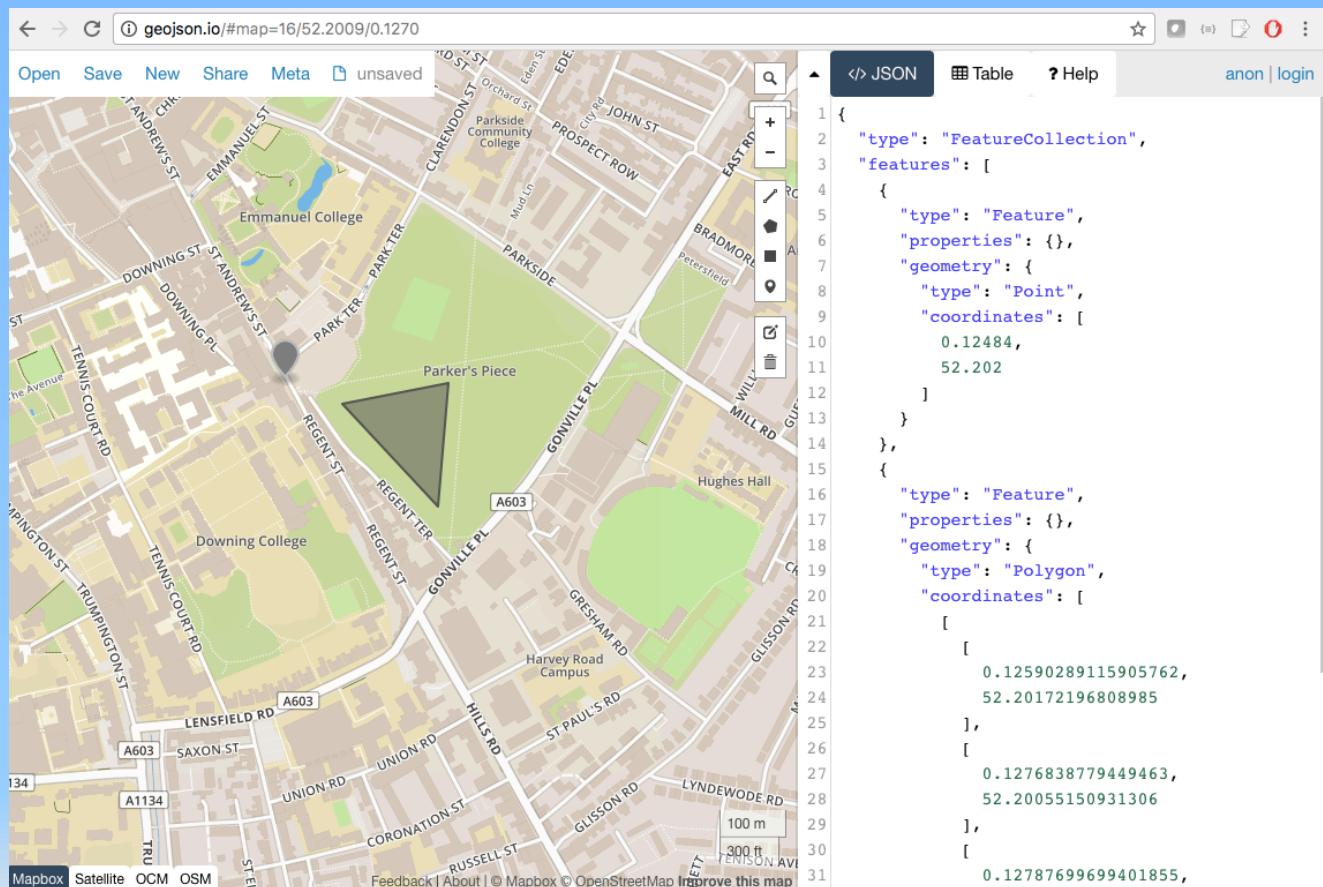
- Extends Leaflet.js
- Adds Mapbox proprietary services

MapboxGL

- Strong vector support
- Limited plugin support

Geojson.io

- Useful site for creating GeoJSON data quickly



OpenStreetMap



OpenStreetMap



Name:	Unknown access
OSM Way:	OSM 40962291 edit
Routing:	30%, 5 km/h, 60s, yes, yes
Surface:	Service road
Flow:	both
bearings:	↗
Length (m):	40
CycleStreets ID:	40962291 edit
tags:	access=private highway=service
highway:	service
access:	private
foot:	private
bicycle:	private
oneway:	no
routeld:	0
note:	start

CycleStreets data interrogation

Overpass Turbo

- Simple-ish way to extract from OSM

- Not for volume

The screenshot shows the Overpass Turbo web application. On the left, a code editor displays an Overpass query:

```
/*
This is an example Overpass query.
Try it out by pressing the Run button above!
You can find more examples with the Load tool.
*/
node
[amenity=bicycle_parking]
({{bbox}});
out;
```

On the right, a map of Cambridge, UK, is displayed with numerous blue circles overlaid, representing bicycle parking locations. A callout box highlights a specific node:

Node 1494177190

Tags:

- access=private
- amenity=bicycle_parking
- bicycle_parking=stands
- capacity=80
- covered=yes
- operator=Hughes Hall (University of Cambridge)

Coordinates:

52.2007998 / 0.1314201 (lat/lon)

At the bottom of the map, status information is shown:

Loaded – nodes: 248, ways: 0, relations: 0
Displayed – pois: 248, lines: 0, polygons: 0

CycleStreets API

- Cycling-related data ☺
- cyclestreets.net/api

CycleStreets API (v2)

Details for: [* Introduction](#) [Go!](#)

[API overview](#)

[Obtain API key](#)

[Usage policy](#)

[Uptime policy](#)

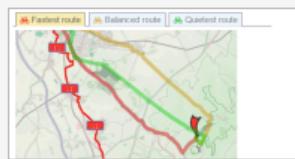
The CycleStreets API (v2) is a modern JSON interface to the routing engine and other CycleStreets components. Our API is used in a range of mobile apps and websites and we are keen to encourage wide usage.



[Apply for an API key](#) for use in your mobile/website application. The API is also available under a Commercial SLA.

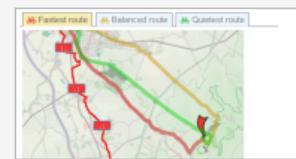
The examples assume an API key is specified – see how to specify an API key.

Journey planner



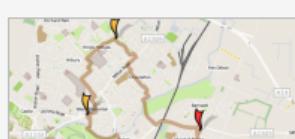
Cycle routing - plan new journey

Plans fastest / quietest / balanced cycle journeys in the UK (and some other areas), knows Sustrans routes, avoids hills, and supports waypoints.



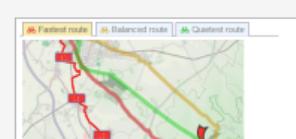
Cycle routing - retrieve

Retrieve an already-planned route.



Cycle routing - plan leisure (circular) route

The leisure routing API will suggest circular leisure routes



Journeys of user

This API provides a listing of the journeys of a specified user, having regard to any privacy settings.



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